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UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 690

Contribution from the Bureau of Markets,
CHARLES J. BRAND, Chief.

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MARKETING PRACTICES OF WISCONSIN AND MINNESOTA CREAMERIES.

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INTRODUCTION.

As information regarding the methods of marketing employed by the creameries in the two largest butter-producing States, Wisconsin and Minnesota, might be of interest to dairy farmers and of value to creamerymen, the marketing practices of these creameries were studied by the United States Department of Agriculture in cooperation with the University of Wisconsin, the University of Minnesota, and the Dairy and Food Department of the latter State.[1] In this bulletin the more important business phases of the marketing practices of these creameries and the market distribution of creamery butter are presented.

FACTORS WHICH INFLUENCE THE MARKETING PRACTICES OF CREAMERIES.

The business operations of a creamery may be classified as those which are primarily (1) manufacturing practices, (2) business practices, and (3) marketing practices. The manufacturing practices

[1] Those participating directly in the investigation were Prof. B. H. Hibbard, Asher Hobson, and Paul Gillen, of the University of Wisconsin, Dr. L. D. H. Weld and O. B. Jesness, of the University of Minnesota, and Chris Johnsen of the Minnesota Dairy and Food Department.

NOTE.—This bulletin should be of interest to creamery men and dairy farmers in the United States.

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include primarily the technical and scientific methods of converting the raw material purchased into various manufactured products. The business practices relate particularly to the administrative organization, including the accounting methods for keeping records of the finances, the products handled, supplies purchased and used, and the investments in the business. The marketing practices are concerned chiefly with the buying of the raw material from producers and the marketing of the products produced. In a general way the buying and selling policies or practices are usually closely related to the business organization and management.

For purposes of comparison from the standpoint of business organization in its relation to the marketing practices, creameries may be divided into two classes; (1) cooperative; and (2) proprietary and noncooperative stock company corporations. As a rule, cooperative creameries, except when a form of patronage dividend is employed, do not buy the milk or cream from the farmer. At most of the cooperative creameries of Minnesota, and at many in Wisconsin, the raw material is received and churned into butter and after the butter is marketed, the cost of manufacturing, plus a small amount for a sinking fund, is deducted from the net return from the sale of the butter and the balance is prorated among the patrons in accordance with the amount of butter fat each has delivered. The stock dividends are usually limited to 6 per cent, and under the cooperative law of Wisconsin enacted in 1911 the nonstockholder is allowed one-half of the trade dividend paid to the stockholder.

Proprietary and stock company creameries usually purchase the butter fat from the farmers at a price based upon the quotations of a recognized wholesale butter market. Some operate on a basis which is practically cooperative by returning to the farmer the average price received for the butter, less a fixed charge for manufacturing, which varies from 2 to 4 cents per pound. Another basis which is used to some extent is that of allowing the creamery the "overrun"[1] as compensation for the cost of manufacturing.

In creameries owned by an individual the marketing policies and practices are determined by the proprietor, while in cooperative and stock company creameries the board of directors usually selects a business manager or delegates the duties of business manager to one of the officers, or to the butter maker. In order to maintain the operating expenses at as low a figure as possible, most cooperative cerameries have generally limited the duties of the business manager of the creamery to a minimum and, therefore, those practices have been employed which require the least expenditure of time and expense. After the butter maker has been employed for the year and

[1] The "overrun" is the difference between the amount of butter fat paid for and butter produced.

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the time and method of payment to the patrons has been decided, the detailed business features have consisted primarily of the keeping of a record of the amount of cream delivered by each patron, the delivery to the transportation agency of the butter produced, and the consignment or shipment of it to market. The problem of transportation and market distribution for the most part have been taken care of by the transportation agencies and wholesale distributors in the market.

BUYING POLICIES AND METHODS OF CREAMERIES.

The methods employed in marketing milk and cream to creameries have undergone marked changes in recent years. Prior to the general use of cream separators on farms, the local creamery prevailed, and practically every creamery obtained its supply of raw material from farms in the vicinity of the creamery or skimming stations which were reached by wagon routes. Reports obtained in 1915 from 900 creameries in Wisconsin and Minnesota showed that only 27 received whole milk exclusively, 243 received both milk and cream, and 630 received separated cream only.

Usually local cooperative creameries required the farmer either to pay the costs of country collecting or to deliver the milk or cream to the creamery in person or as might be arranged. Reports from 127 creameries in Wisconsin showed that 71 creameries included the cost of collecting in the operating expenses while 54 charged the cost of collecting to the patron and 2 employed a combination of these two methods. The cost of collecting varied from 0.5 to 4.6 cents per pound butter fat, with an average cost of approximately 1.7 cents. The patrons of many local creameries in Minnesota organized "rings" of two or more farmers, in which each took his turn in hauling his own and the cream of the others. This method of hauling gave each member the full benefit of a delivered price. At about 20 per cent of the creameries, all or a part of the cream was gathered by routes, the average length of which was about 23 miles. At eight creameries which gathered their cream mostly by routes the average cost of collecting 952,449 pounds of butter fat by routes was 2.7 cents per pound.

At some creameries it was a common practice for the patrons to deliver their cream every two or three days, although some delivered only once a week. Those creameries which required daily deliveries in summer, often permitted delivery every other day in winter, and when three deliveries a week in summer were required, two were permitted in winter. Many creameries required the cream to be delivered in the morning, while others accepted it at any time during the day.

In the transportation of cream by railroad to 40 centralizing creameries, the average cost was reported to be 1.63 cents per pound of butter fat. This, however, did not include the country collecting or delivery cost incurred by the farmer in the delivery of his cream to the receiving or shipping station.

BUYING OF CREAM BY GRADE.

The infrequency of delivery of cream to creameries and other factors have resulted in the marketing of considerable cream of inferior quality. A number of creameries, recognizing the relation of poor cream to poor butter, which on the market sells at lower price (see fig. 1), have sought to encourage more frequent deliveries by establishing grades for cream and by paying different prices for the various grades. About 15 per cent of the creameries in Minnesota from which information regarding cream grading was obtained had employed a grading system. Usually two grades were employed and a premium of 2 or 3 cents per pound of butter fat was paid for the better grades of cream. Many creameries reported that they were in favor of grading and intended to adopt such a system.

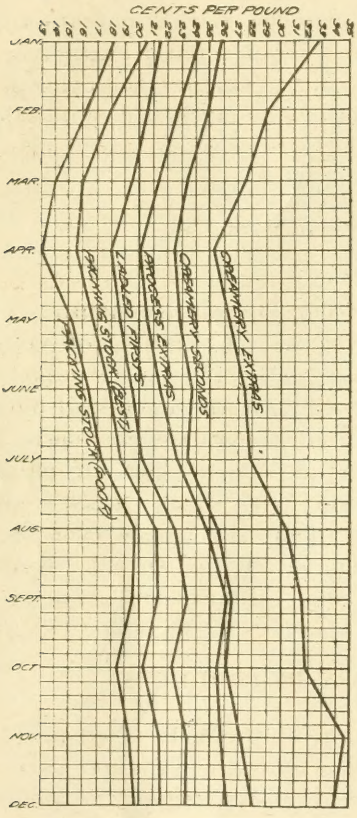

FIG. 1.—Average monthly quotations on the New York market for various classes and grades of butter for the year 1914.

The general opinion of those creameries which had graded their cream was that the quality of the cream received had been greatly improved. Those which had noted the effect of cream grading on the price received for their butter stated that an increase had been obtained. Eight creameries which churned the first and second grade cream separately showed an average increase in price of 3.6 cents per pound for the butter churned from the first grade cream. At some creameries, the patrons who supplied second-grade cream objected to the grading system and in some cases a few patrons had been lost.

BASIS OF PRICE PAID FOR CREAM.

The usual practice of the cooperative creameries of Wisconsin and Minnesota was to prorate the net receipts among the patrons according to the amount of butter fat each had furnished. Those creameries in Minnesota which did not operate on the cooperative basis, usually based their buying price of butter fat on the New York butter quotation for "extras." Creameries in Wisconsin used either the Elgin or Chicago quotation, and frequently paid premiums above the quotations when the Elgin quotation was used.

The centralizing creameries in these States gave consideration to the price paid by local creameries, also the market quotations at New York, Chicago, Elgin, and Boston. When country cream receiving stations were operated by centralizing creameries, the price paid to the patrons for butter fat was sometimes as much as 4 cents below New York "extras." Direct cream shippers received approximately the market quotation for "extras."

FREQUENCY OF PAYMENT TO PATRONS.

About 80 per cent of the cooperative creameries of Minnesota paid their patrons once a month and 15 per cent paid twice a month. The frequency of payment varied with the others. The system of paying the patrons monthly may be accounted for by the usual method of prorating the monthly net receipts according to the amount of butter fat each patron had delivered. The noncooperative creameries in Minnesota were about equally divided on the methods of paying once a month, twice a month, and at time of delivery. Of 250 creameries in Wisconsin, 48 per cent paid monthly, 39 per cent semimonthly, and the rest either daily, semiweekly, or weekly. Nearly all centralizing creameries paid for each shipment of cream as it was received.

MARKETING OF CREAMERY BY-PRODUCTS.

Skim milk and buttermilk are natural by-products of creameries. It was found that usually the skim milk was returned to those patrons who delivered whole milk, at the rate of 80 per cent of the amount of whole milk delivered.

Frequently the buttermilk at country creameries was contracted to a regular buyer or to patrons at 10 cents per can, or at 1 to 1½ cents per gallon. Creameries located in large cities often sold buttermilk to hotel and other city trade at 2 to 10 cents per gallon.

Ice cream, while not ordinarily considered as a creamery by-product, was manufactured as a creamery "side line" in about 20 per cent of the creameries in Wisconsin, and 2.1 per cent of those in Minnesota, by the converting of a part of the milk and cream sup-

ply into this product. Some creameries made only a few gallons per day, while others engaged in ice-cream production more extensively. In most instances it was sold to local trade in the city in which the creamery was located. The annual receipts from the sale of ice cream at the creameries varied from less than $1,000 to over $35,000.

TRANSPORTATION OF CREAMERY BUTTER TO MARKET.

The shipment of butter to market was usually made by refrigerator freight. The schedules in most instances provided for weekly or semiweekly shipments. The butter produced after the shipping day, was usually held in storage at the creamery. The facilities for storage at most creameries consisted of insulated storage rooms which were kept cold either by the use of ice or mechanical refrigeration. About 92 per cent of the creameries used ice, as it was considered cheaper.

In furnishing refrigerator service to local creameries, the railroad company either set out an iced refrigerator car on the sidetrack at the creamery's shipping station or carried a refrigerator car in a local way freight, which made it necessary for the creamery to deliver its butter to the depot where it was ready when the refrigerator car arrived. The consolidation of less-than-carload shipments into full carloads was effected at division points, where a number of cars were assembled on parallel tracks or along a platform, and the butter destined to different markets was transferred into separate cars. (See fig. 2.) The butter which had arrived over the different divisions was thus loaded so that each shipment could be forwarded by through fast freight to its final destination.

The transportation charges and routing of shipments varied somewhat in different sections. Northern Minnesota butter in less-than-carload lots, routed rail-lake-and-rail via Duluth to Buffalo and points beyond, took a combination of rates on Duluth and Buffalo. The tariffs of the lake carriers required a minimum of 15,000 pounds of "dairy products," i. e., butter, eggs, and dressed poultry, in straight or mixed lots from one shipper for one destination and delivery. For the purpose of economizing in freight charges the Minnesota shippers employed an agent at Duluth who effected consolidation of the shipments at that point.

The all-rail shipments moved through Chicago, while many from Minnesota moved through St. Paul. The less-than-carload shipments took the second-class rate to Chicago, while the carload shipments took the third-class rate, with a minimum weight of 20,000 pounds. Usually the less-than-carload shipments were consolidated by the railroads at St. Paul, Chicago, and other points in order to

make full cars for separate destination, which resulted in quicker time in transit to the final destination. The through rate to eastern points was a combination rate on St. Paul or Chicago. The second-class rate applied to that portion of the routing east of St. Paul or Chicago, and was the same for carload and less-than-carload shipments, so that the through carload rate was very little lower than the through less-than-carload rate.

FIG. 2.—Consolidating less-than-carload shipments destined to the same market into one car.

SHRINKAGE OF BUTTER FROM CREAMERY TO MARKET.

Shrinkage is usually considered as the difference between the weight of butter at the creamery and at the market. Since only tub butter is sold on the weight-at-market basis, the investigations were confined to this style of package. Prior to the date on which the net weight amendment to the Federal food and drug act became effective many creameries did not weigh their butter carefully before shipping. This amendment requires that the net weight of each package be marked upon it. If the weight is overmarked the creamery becomes liable

to prosecution, and if undermarked the creamery may be paid for less than the actual net weight of the butter if the receiver or buyer accepts the weights marked on the packages by the creamery. In the investigation, comparisons of creameries' weights and receivers' weights were made of 1,044 tubs, consisting of 55 shipments of Minnesota butter, forwarded to 32 firms on seven different markets. The net weight at the market was 605.5 pounds less than the weight at the creamery, or an average of 0.58 pounds less per tub than the creameries' weights.

Considerable variation in shrinkage was observed in the various shipments. One shipment showed an average loss of 2.3 pounds per tub, while another apparently gained 1.37 pounds per tub. These wide variations may have been due to errors in weighing at the creamery and the methods of weighing employed by the receivers of butter in the market. In some markets fractional pounds were not considered by the receivers and only a portion of the tubs were stripped to get the average tare which was used in estimating the net weights for the entire lot.

In a more detailed investigation, including both Wisconsin and Minnesota butter, where weighings were made to one-fourth pounds by representatives of the department, both at the creamery and in the market, the following results were obtained:

State.	Chicago shipments.		New York shipments.	
	Number of tubs.	Average shrinkage.	Number of tubs.	Average shrinkage.
Wisconsin	160	0.399	46	0.418
Minnesota	149	.210	345	.217

The actual average net shrinkage on the Wisconsin butter was approximately four-tenths of a pound per tub, and on the Minnesota butter only two-tenths of a pound. The difference in the shrinkage of the butter per tub when the weighings were made in the market by the receivers, and when made by representatives of the department, may be explained by the differences in the methods of weighing.

The representatives of the department, both at the creamery and in the market, obtained the gross weight of the tub when filled and when empty (not including the tub cover) to the nearest quarter pound. The difference between these weights was taken as the net weight of butter.

MARKET METHODS OF WEIGHING.

The receivers on the market usually weigh each tub in the shipment separately to obtain its gross weight. In obtaining the gross weight, fractions of pounds usually were disregarded; in fact, most

receivers require that the beam of the scale touch the upper rest. If it merely plays lightly on or above the center, practically a whole pound is lost to the creamery, as the next lower pound is taken as the weight. After each tub has been weighed (gross), a few are stripped—that is, the butter is removed and weighed. (See fig. 3.) In this weighing all fractions are again disregarded and up-weights usually are required. By this practice it is possible for a creamery to lose practically a pound on certain tubs, and occasionally it may lose even 2 pounds through a slight error in both the gross and net weights. This, however, is not frequent, for the results obtained showed that ordinarily the difference between the weights made at the creamery and the weights obtained at the market under the prevailing market practice of approximating the net weights was from one-half to three-fourths of a pound per tub. A portion of this difference is shown by the weighings made by the department's representatives to be due to an actual shrinkage or loss in the net weight of the butter while in transit to market. With the increase in the market value of butter during recent years, the financial loss to the creamery caused by the present method of approximating the net weight is much larger than it was formerly when the present market method of weighing was established.

FIG. 3.—In making "test-weights" to determine the tare weight of the tub, strong up-weights are usually required.

Occasionally a weigher will "give and take"; that is, recognize a full pound even if the beam of the scales balances merely on the center. In other words, "snug up-weights" are not required when

the stripped tub of butter is weighed. By recognizing half pounds the weights obtained would approximate closely the actual net weight and eliminate a large part of the difference between the weights at the creamery and the market.

MARKETING OF BUTTER BY CREAMERIES.

The various buyers of creamery butter may be classified as consumers, retailers, jobbers, and wholesalers. The patrons comprise the principal outlet for the sale of butter direct from creameries to consumers. Approximately 4 per cent of the butter produced by Wisconsin creameries, and 6 per cent of that produced in Minnesota was sold to the creamery patrons. At some creameries nearly all the patrons obtained their butter from the creamery while at others the sales to patrons were limited.

Creameries located in large cities sold a large part of their butter at some seasons to retailers, while some of the country creameries sold practically none to this class of tarde. Of the total amount of creamery butter produced in Minnesota, less than 7 per cent was sold to retailers, while in Wisconsin approximately 15 per cent was marketed in that way.

Many jobbers who function as wholesale distributors in supplying retail trade bought a large portion of their supply in print packages from creameries. Centralizing creameries located in large cities sold local grocers large quantities of butter in prints. That which was not sold locally was usually marketed through their own sales organization or distributed in prints or tubs through jobbing agents. The principal cities to which butter was shipped to wholesale butter distributors were Chicago, New York, Boston, and Philadelphia. These four markets received about two-thirds of the butter produced in these two States. Chicago received approximately one-half of Wisconsin's butter and less than 15 per cent of Minnesota's, while over one-half of Minnesota's was marketed in New York City, and less than 10 per cent of Wisconsin's.

CREAMERY METHODS OF MARKETING.

The general practice of Wisconsin and Minnesota creameries in marketing tub butter was to ship it to wholesale receivers upon an informal agreement between the creamery and the receiver under which the price to be received usually was based upon a designated market quotation for "extras." About 80 per cent of the Wisconsin creameries based their agreements on the Elgin quotation; 16 per cent on Chicago; and 4 per cent on the New York quotation. Minnesota creameries which shipped to New York generally used the New York quotation as the basis of their price agreement. The agreements frequently varied, including market quotation net f. o. b. shipping station; market quotation net f. o. b. receiver's station;

market quotation plus a premium less freight; market quotation plus a premium less freight and cartage; or market quotation plus a premium less freight, cartage, and commission.

Of those Wisconsin creameries which sold on the basis of the Elgin quotation, approximately 70 per cent received the flat Elgin quotation and the others a premium of from 1 to 4 cents above. When the Chicago quotation was used, the flat quotation generally prevailed although the net price received varied from ½ cent below to 1½ cents above. It is estimated that approximately 15 per cent of the creameries of Minnesota sold their butter f. o. b. the shipping station; 85 per cent had freight charges deducted, and 37 per cent were charged a commission. The chief reason for deducting a commission was that many of the creameries were accustomed to it and by allowing a commission to be deducted the gross price obtained could be expressed in the form of a premium above the quotation. By allowing a commission of ½ cent and a freight charge of approximately 1½ cents to be deducted, a creamery would receive a gross price of 2 cents above market quotation, which actually was equal to the quotation net at the shipping station.

A common custom of the creameries was to forward their shipments on order bills of lading and to draw a draft against the consignee which was passed to their local bank for collection or credit. When a sight or demand draft is used it is attached to the original copy of the "order" bill of lading. The draft usually is drawn to cover from 60 to 75 per cent of the value of the shipment. One advantage of the order bill of lading is that the consignor has control of the shipment until the draft is paid, and the creamery's risk of collection for the goods is reduced by that amount. The use of this form of a bill of lading is desirable when demand or sight drafts are used and shipments are made to firms whose financial standing has not been ascertained.

MARKET DISTRIBUTION OF CREAMERY BUTTER.

The following method of wholesale market distribution of creamery butter was found to be prevalent:

Upon the arrival of a freight shipment of butter at a terminal market, a notice was sent by the railroad to the consignee. The butter was trucked to the receiver's salesroom, where it was weighed, inspected, and held for sale or disposal.

As a means of identifying the shipments from each consignor, the receiver usually furnished the creamery with a rubber stamp or stencil which was used on the top of each tub. This stamp gave the name and address of the consignee, and the serial number of the creamery. These stencil numbers were frequently removed by the receiver before the butter was sold.

During the season of surplus production, beginning about April 1 and ending September 1, that portion of the market receipts which did not pass into immediate consumption was usually put into public cold storage either by the receiver or by other buyers of butter for storage purposes. The rates for storage varied according to the length of time that the butter was held. Ordinarily, storage rates were figured at three-fourths of a cent per pound for a storage period of six months. As a temperature of zero degrees F. or below was maintained in the storage rooms, the butter usually deteriorated but little in quality. Butter stored in warehouses was usually insured for approximately 80 per cent of its value at a charge of from 60 cents to $1.50 per $100, depending upon the character of construction of the storage. The warehouse receipt and the insurance certificates were used as collateral in obtaining loans on butter in storage. The usual rate of interest on these loans was 6 per cent. The largest quantities were placed in storage during May, June, and July, and the withdrawal from storage was heaviest from September 1 to April 1. Approximately 70 per cent of all butter stored was received into storage during the months of May, June, and July. Approximately 74 per cent was taken from storage from September 1 to April 1.

The business of the wholesale receiver is, in general, organized about as follows: A general manager supervises the entire business and gives particular attention to securing the supplies of butter, often personally supervising the soliciting of shipments from creameries. The cashier has general supervision of the clerical force and bookkeepers. The "floor man" in the receiving room is an expert judge of butter quality and oversees the grading and taking out of the orders. The sales force keeps in close touch with the general manager, floor man, and the credit department. The credit department usually consists of a credit clerk who is responsible to the cashier and the general manager.

Many wholesale receivers function also as jobbers. Jobbers may operate as wholesale receivers or they may obtain their supply of butter from wholesalers. The retail stores are supplied by jobbers who take orders and deliver the quantity and quality of butter in such size and style of packages as the retailers' trade requires. In addition, the jobbers also supply such trade as restaurants and hotels, dining cars and boat service, and out-of-town retailers and jobbers.

The marketing of creamery butter from producer to consumer is not dependent upon any one system of wholesale or retail distribution. (See fig. 4.) Local creameries, cream stations, and centralizing creameries may act as agents of the producer or they may be cash

buyers of his milk and cream. The exclusive distributing agent of a centralizing creamery may receive a salary, a salary and commission on sales, or a commission alone. Not infrequently the butter is purchased on a regular contract basis. Thus the ownership of the goods passes, while in the former instances it remains with the creamery. The cooperative marketing associations may be selling agents of local creameries. A brokerage agent usually represent a jobber or wholesaler in buying butter from a centralizing creamery or wholesale dealer. Cold-storage firms do not usually buy or sell butter, although they frequently make loans on goods put in their storages.

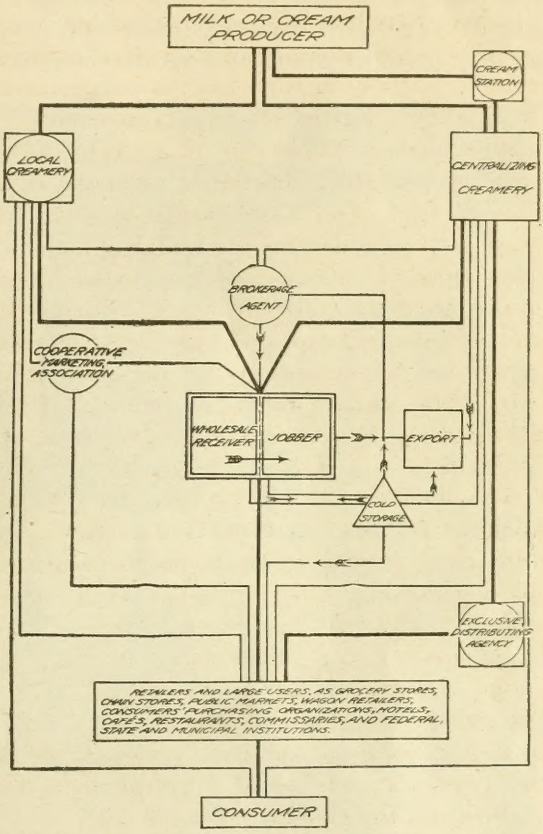

FIG. 4.—Channels of distribution of creamery butter from producer to consumer. The most usual channels are indicated by the heavy lines. The rectangles denote a change of ownership of goods and the circles an intervening agency between seller and buyer—usually a cooperative organization representing the seller.

COST OF MARKET DISTRIBUTION OF CREAMERY BUTTER.

As creamery butter in passing from producer to consumer may be handled through different channels of trade, the average margin or approximate cost in one channel may not represent the cost in any other.

The following in general was found to be approximately the usual margin on tub butter when it passed direct from wholesale receiver to jobber, from jobber to retailer, and then from retailer to consumer.

	Cents.
Wholesaler's gross margin	½
Jobber's gross margin	1½
Retailer's gross margin	4
Total	6

These margins do not always prevail, for a wholesale receiver may handle a carload of butter for a quarter of a cent per pound and a chain store[1] may retail to consumers on a gross margin of 3 cents per pound.

Butter which has been carried for several months in cold storage and has incurred charges such as interest on loans, storage, insurance, and drayage and which has risked deterioration, may be sold at a net loss or a net profit of several cents, depending upon the quality

FIG. 5.—Inspecting a shipment of butter by a wholesale receiver.

of the butter and its market value when taken from storage. The margin on butter purchased by a retailer direct from a creamery may vary from 2 cents to 10 cents per pound. Some retailers follow closely the wholesale market quotations and base both their buying and selling prices on it. The margins on butter depend to a considerable extent upon market conditions, trade requirements, and the service given.

[1] Chain stores consist of a number of retail stores operated under a single management.

CONCLUSIONS.

The great majority of the creameries in Wisconsin and Minnesota usually produced a quality of butter for which there was an active market demand. The comparative ease with which creameries have been able to contract, or to sell their butter to wholesale receivers has not necessitated the employment of expert salesmanship. With traveling representatives of wholesale receivers willing to contract for the yearly output of the creameries and the contracts with receivers frequently renewed year after year, individual rather than cooperative action among creameries in marketing butter has prevailed. In most instances the creameries have been well satisfied with the returns received and therefore the necessity of cooperation among creameries has not been strongly apparent. Thus the efforts toward organizing cooperative marketing federations of creameries for marketing butter independent of the regular wholesale outlets, have never found much favor or been developed to any great extent.

The need for cooperative action among creameries in marketing their butter, and the advantages to be derived therefrom in the future, will depend upon the changes which take place in the market distribution and the butter marketing conditions in the larger wholesale markets. The present increasing demand for manufacturers' brands and for carload shipments of butter of uniform quality, indicates a growing change in marketing conditions, and suggests the need of cooperation among country creameries in standardizing the quality of their butter in accordance with such requirements as those of "State brands,"[1] and of being better informed regarding market conditions and outlets for the sale and distribution of their product. It is possible that the benefits to be derived by cooperative action and through marketing federations of creameries may be more apparent in the future than in the past, as improved marketing methods are required to meet the problems which may arise under new marketing conditions.

[1] The requirements of State brands in Minnesota, Michigan, and Iowa are given in Bulletin No. 456 of the U. S. Department of Agriculture, entitled "Marketing Creamery Butter."

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